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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,708	07/29/2004	Kevin Patrick Capaldo	148201-1	4707
23413	7590	12/16/2005		EXAMINER
CANTOR COLBURN, LLP				BUI-PHO, PASCAL M
55 GRIFFIN ROAD SOUTH				
BLOOMFIELD, CT 06002			ART UNIT	PAPER NUMBER
				2878

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/710,708	CAPALDO ET AL. <i>(pm)</i>	
	<b>Examiner</b>	<b>Art Unit</b>	
	Pascal M. Bui-Pho	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 29 July 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-39 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-39 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 29 July 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>29 July 2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

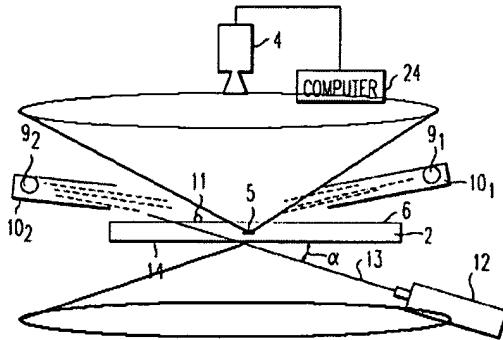
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 8-12, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Jutard et al. (US 5,598,262).

With regards to claim 1, Jutard et al. disclose a system for detecting defects in a material (2), the material having a first side (6 or 14) and a second side (6 or 14), comprising: a first light source (9<sub>1</sub>, 9<sub>2</sub>, or 12) configured to emit light onto the first side of the film in a first predetermined region of the material; a second light source (9<sub>1</sub>, 9<sub>2</sub>, or 12) configured to emit light onto the second side of the film in the first predetermined region of the film; a first camera (4) configured to received a first portion of light reflected from the first predetermined region of material from the first light source and a second portion of the light propagating through the film from the second light source (Fig. 4); and a signal-processing device (24) operably coupled to the first camera configured to detect a defect in the first predetermined region of the film based on at least one of the first and second portions of light.

With regards to claim 2, Jutard et al. inherently disclose a system wherein the first camera (4) is disposed at the center of a first conically shaped region, the first conically shaped region extending from the first predetermined region of the material (2) outwardly from the first side and having an apex proximate the first predetermined region, the first conically shaped

region being centered about an axis, the axis extending through the first predetermined region of the material generally perpendicular to the material, the first conically shaped region extended around the axis at an angle. See Drawing 1 below.



Drawing 1

With regards to claim 8, Jutard et al. disclose an inspection system inherently capable of detecting non-repeating defect on the material by acquiring successive images (Column 4, lines 22-48).

With regards to claim 9, Jutard et al. disclose a system wherein the signal-processing device (24) detects the non-repeating defect in the first predetermined region of the film based on both the first and second portions of light (Column 2, line 60 – Column 4, line 67).

With regards to claim 10, Jutard et al. disclose an inspection system inherently capable of detecting repeating defect on the material by acquiring successive images (Column 4, lines 22-48).

With regards to claim 11, Jutard et al. disclose a first camera comprising a CCD camera (Column 2, lines 45-57).

With regards to claim 12, Jutard et al. disclose a system wherein the first and second light sources (9<sub>1</sub>, 9<sub>2</sub>, 12) and the first camera (4) are oriented toward the first predetermined location (5).

With regards to claim 21, Jutard et al. disclose a method for detecting non-repeating defects in a material having a first side and a second side, the method comprising: emitting light from a first light source onto the first side of the film in a first predetermined region of the material; emitting light from a second light source onto the second side of the material in the first predetermined region of the material; and detecting a defect in the material based on at least one of first portion of the light reflected from the first predetermined region of film from the first light source and a second portion of the light propagating through the material from the second light source (Column 2, line 33 – Column 4, line 67).

With regards to claim 22, Jutard et al. disclose a method wherein the defect comprises a defect, the non-repeating defect being detected using the first and second portions of light (Column 2, line 33 – Column 4, line 67).

With regards to claim 23, Jutard et al. disclose an inherent method wherein the defect comprises a repeating defect, the repeating defect being detected using at least one of the first and second portions of light (Column 2, line 33 – Column 4, line 67).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-7, 13-20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jutard et al. (US 5,598,262).

With regards to claims 14 and 15, Jutard et al. disclose a system comprising a first and second light source configured to emit light onto a first and second side of a material, respectively; a camera configured to receive transmitted and reflected light from first and second portions of said light sources; and a signal-processing device to detect a defect based on the first and second portions of light. Including duplicates of such system for the purpose of greater detection accuracy or system performance would have been obvious to one of ordinary skill in the art. It would have been obvious to one of ordinary skill in the art to modify Jutard et al. accordingly in order to increase the performance and capabilities of the optical system. With regards to claim 15, the further specification of a first conically shaped region as inherently taught by Jutard et al. would have also been obvious for similar reasons set forth above.

With regards to claims 4, 6, 17, and 19, Jutard et al. inherently disclose a system wherein the second light source is disposed at least partially within a second conically shaped region, the second conically shaped region being centered about the axis, but lack a clear specification of the second conically shaped region extending around the axis at the predetermined angle. Such inclusion would have inherently been included, however, if not, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to provide precise illumination of the material. With regards to claim 6, Jutard et al. inherently disclose a third conically shaped region extending from the first predetermined region of material outwardly from the first side and having an apex proximate the first predetermined region, the third conically shaped region extending around the axis at a second angle. With

regards to claims 17 and 19, similar further citations would have been obvious for similar reasons set forth above.

With regards to claims 3, 5, 7, 16, 18, and 20, although Jutard et al. disclose a plurality of conically shaped regions extending around an axis at an angle, a clear predetermined angle range is not disclosed. It would have inherently been included for optimal detection, however, if not, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to better detect flaws. The further method citations would also have been obvious for similar reasons set forth above.

With regards to claim 13, although Jutard et al. disclose a first camera, a clear specification of a first camera being out of focus a predetermined amount is lacking. Such inclusion would have been inherently included to better detect flaws, however, if not, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to improve the image resolution.

With regards to claim 24, Jutard et al. lack an inclusion of a mean to generate a second digital image from a second portion of the light propagating through the material from the second light source and summing the first and second digital images to obtain a summed image. Such inclusion would however have been obvious to one of ordinary skill in the art at the time of the invention for the purpose of acquiring an image with greater range. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to ensure greater detection accuracy.

5. Claims 25-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jutard et al. (US 5,598,262) in view of Soar (US 6,960,777).

With regards to claims 25 and 32, Jutard et al. disclose a system for detecting defects in a material, comprising first and second light sources (9<sub>1</sub>, 9<sub>2</sub>, or 12) configured to emit light onto a first (6 or 14) and second (6 or 14) sides, respectively; a first camera (4) disposed adjacent the first side of the film proximate the first light source that receives transmissive and reflected light from the material and generates a first plurality of digital images of the material covering a first region of the material to a second region of the material as the material moves in an axial direction; and a signal process-device (24) configured to detect defects in the material based on digital images, but lack an inclusion of third and fourth light sources configured to emit light onto the first and second sides, respectively, of the material, the third light source emitting light during a first predetermined time period when the fourth light source is not emitting light, the fourth light source emitting light during a second predetermined time period after the first predetermined time period when the third light source is not emitting light; and a second camera disposed adjacent the second side of the material that receives either transmissive or reflected light from the material and generates a second plurality of digital images of the material covering the first region of the material to the second region of the material as the material moves in an axial direction. The addition of a duplicate defect detection system for the purpose of greater detection accuracy is obvious as stated previously. Soar discloses an analogous mechanism comprising: two light sources (102, 104) wherein a first light source (102) is positioned incident to a first side of a media (110), a second light source (104) is positioned incident to the second side of the media, a detector (106) positioned incident to the second side of the media to detect first light transmitted through the media (from first light source) and second light reflected off the media (from second light source), and a controller (108) capable of turning on and off said

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light sources such that at any given time just one of the light sources is on and emitting light (Column 3, lines 23-46). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Jatard et al. and include third and fourth light sources coupled to the signal processor in order to minimize light interference and thereby improving defects detection. With regards to claim 32, the further method citation would have been obvious for similar reasons set forth above.

With regards to claims 26 and 34, Jutard et al. inherently disclose a system wherein the first camera (4) is disposed at the center of a first conically shaped region, the first conically shaped region extending from the first predetermined region of the material (2) outwardly from the first side and having an apex proximate the first predetermined region, the first conically shaped region being centered about an axis, the axis extending through the first predetermined region of the material generally perpendicular to the material, the first conically shaped region extended around the axis at an angle. See Drawing 1 above. With regards to claim 34, the further method citation would also have been obvious for similar reasons cited above.

With regards to claims 28, 30, 36, and 38, Jutard et al. in view of Soar disclose a system wherein the second light source is disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of material outwardly from the second side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the first axis, but lack a clear specification of a second conically shaped region extending around the first axis at the predetermined angle. Such inclusion would have inherently been included, however, if not, it would have been obvious for one of ordinary skill in the art at the time of the invention to

modify Jutard et al. accordingly in order to provide precise illumination of the material. With regards to claim 30, Jutard et al. in view of Soar inherently suggest a first light source disposed at least partially within a third conically shaped region, the third conically shaped region extending from the first predetermined region of material outwardly from the first side and having an apex proximate the first predetermined region, the third conically shaped region being centered about the first axis, the third conically shaped region extending around the first axis at a second angle (see Drawing 1 above). With regards to claims 36 and 38, the further corresponding method citations would also have been obvious for similar reasons set forth above.

With regards to claim 33, Jutard et al. in view of Soar disclose an inherent memory embedded in a computer and/or controller to determine defects, but fail to suggest a method summing each of the first plurality of digital images with a corresponding image of the second plurality of digital images to obtain a summed digital image of the first region to the second region of the material. Such inclusion would however have been obvious to one of ordinary skill in the art at the time of the invention for the purpose of acquiring an image with greater range. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to ensure greater detection accuracy.

With regards to claims 27, 29, 31, 35, 37, and 39, although Jutard et al. disclose a plurality of conically shaped regions extending around an axis at an angle, a clear predetermined angle range is not disclosed. It would have inherently been included for optimal detection, however, if not, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify Jutard et al. accordingly in order to better detect flaws. The further method citations would have been obvious for similar reasons set forth above.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714. The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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